Notice No.1

Rules and Regulations for the Classification of Inland Waterways Ships July 2017

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices.

Any corrigenda included in the Notice are effective immediately. Please note that Corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: October 2017

Amendments to	Effective date	Mandatory Instrument
Part 3, Chapter 7, Section 1	Corrigenda	N/A
Part 5, Chapter 2, Section 3	Corrigendum	N/A
Part 5, Chapter 3, Section 5	Corrigendum	N/A
Part 5, Chapter 4, Sections 3 & 4	Corrigenda	N/A
Part 5, Chapter 11, Section 10	Corrigendum	N/A
Part 5, Chapter 12, Section 11	Corrigenda	N/A
Part 5, Chapter 13, Section 1, 2, 3, 4, 5, 7 & 9	Corrigenda	N/A
Part 5, Chapter 15, Sections 1 & 2	Corrigenda	N/A

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Part 3, Chapter 7
Bulkheads

■ *Section 1*
General

1.6 Protection of tanks carrying fuel oil, lubricating oil, vegetable or similar oils

1.6.1 Cofferdams are required between each tank carrying:

(a) Fuel oil or lubricating oil;
(b) Feed water or fresh water; and
(c) Vegetable or similar edible oils.

However, cofferdams need not be fitted between fuel oil or lubricating oil double bottom tanks and deep tanks carrying ~~*Pt 3, Ch 7, 1.6 Protection of tanks carrying fuel oil, lubricating oil, vegetable or similar oils 1.6.1.(b)*~~ feed water, fresh water or ~~*Pt 3, Ch 7, 1.6 Protection of tanks carrying fuel oil, lubricating oil, vegetable or similar oils 1.6.1.(c)*~~ vegetable or similar edible oils provided that the double bottom tanks are not interconnected with any tanks above.

Part 5, Chapter 2
Engines

■ *Section 3*
Design

3.7 Equivalent alternating stress

3.7.2 Equivalent alternating stress for the outlet of the crankpin oil bore σ_{eob}, is defined as:

~~$\sigma_{eob} = \pm\frac{1}{3}\sigma_{bo1} + 2\sqrt{1+\frac{9}{4}\frac{\tau^2_{to}}{\sigma_{bo}}}$ N/mm^2~~

$$\sigma_{eob} = \pm\frac{1}{3}\sigma_{bo}\left[1+2\sqrt{1+\frac{9}{4}\left(\frac{\sigma_{to}}{\sigma_{bo}}\right)^2}\right] \text{ N/mm}^2$$

Part 5, Chapter 3
Gearing

■ *Section 5*
Tests

5.3 Backlash

5.3.1 The normal backlash between any pair of gears should not be less than:

~~$\frac{a\,\alpha_n}{90\,000} + 0{,}1$ mm~~ $\frac{a \cdot \alpha_n}{90\,000} + 0{,}1$ mm

Part 5, Chapter 4
Main Propulsion Shafting

■ *Section 3*
Design

3.8 Coupling bolts

3.8.5 Where clamp bolts are fitted they are to comply with the requirements of ~~*Pt 5, Ch 4, 3.8 Coupling bolts 3.8.2*~~ *Pt 5, Ch 4, 3.8 Coupling bolts 3.8.3* and are to be installed, and the bolt holes in the flanges correctly aligned, in accordance with manufacturer's instructions.

■ *Section 4*
Approval of alloy steel used for intermediate shaft material

4.1 Application

4.1.1 The requirements of *Pt 5, Ch 4, 4 Approval of alloy steel used for intermediate shaft material* are, in addition to the requirements of the *Rules for the Manufacture, Testing and Certification of Materials, July 2016, incorporating Notice No. 1 & 2*, *Ch 5, 3 Forgings for shafting and machinery*, to be applied to the approval of alloy steel which has a ~~mini~~ minimum specified tensile strength greater than 800 N/mm2, but, not exceeding 950 N/mm2 intended for use as intermediate shaft material.

Part 5, Chapter 11
Ship Piping Systems

■ *Section 10*
Air and sounding pipes

10.2 Materials

10.2.1 Air and sounding pipes are to be made of steel or other approved material. For use of plastic pipes of approved type, *see ~~Pt 5, Ch 10 Piping Design Requirements~~ Pt 5, Ch 10, 5 Plastic pipes*.

Part 5, Chapter 12
Machinery Piping Systems

■ *Section 11*
Thermal oil systems

11.3 Expansion tank arrangement

11.3.2 For the minimum required pressure in the expansion tank or, alternatively, the minimum required height above the installation, *see ~~Pt 5, Ch 13, 6.4 Cargo sampling arrangements 6.4.9~~ Pt 5, Ch 13, 7.4 Heating circuits 7.4.8*.

11.5 *Cross-references*

11.5.1 For thermal oil system requirements for oil and chemical tankers, *see ~~Pt 5, Ch 13, 6 Cargo tank level gauging equipment and arrangements against overfilling~~ Pt 5, Ch 13, 7, Cargo heating arrangements*.

Part 5, Chapter 13
Piping Systems for Ships Intended for the Carriage of Liquids in Bulk

■ *Section 1*
General requirements

1.2 Plans and particulars

1.2.1 In addition to the plans and particulars required in *Pt 5, Ch 11 Ship Piping Systems*, the following plans (in diagrammatic form) are to be submitted for consideration:

(e) Arrangements of inert gas piping systems, together with full details of inert gas plant, if fitted. *See ~~Pt 5, Ch 8 Cargo temperature control arrangements~~ Pt 5, Ch 13, 9 Inert gas systems*.
(g) Pressure drop calculations, *see ~~Pt 5, Ch 13, 4.3 Design loads~~ Pt 5, Ch 13, 5.5 Loading and unloading rates for Type C and Type N-closed tankers*.
(h) Cargo heating systems, *see ~~Pt 5, Ch 13, 6 Cargo tank level gauging equipment and arrangements against overfilling~~ Pt 5, Ch 13, 7 Cargo heating arrangements*.

1.3 Materials

1.3.8 A list of Defined Cargoes, intended to be carried on board, is to be established. Due account is to be given to the materials proposed. *See Pt 4, Ch 4, 1.3 Dangerous liquids* ~~for dangerous liquids~~. *See Pt 4, Ch 5, 1.5 List of Defined Cargoes* for Type G tankers and *Pt 4, Ch 6, 1.5 List of Defined Cargoes* for Type C and N tankers.

■ *Section 2*

Piping systems for bilge, ballast, fuel oil, etc

2.2 Drainage and/or ballasting of spaces within the cargo zone

2.2.14 The diameter d_b of the bilge line suction pipe is to be not less than required by the following formula, to the nearest 5 mm, but in no case is the diameter of any suction to be less than 50 mm:

$$d_b = 2.0\, C\, (B + D) + 25 \text{ mm}$$

where

~~*C*~~ *D* = Depth of the compartment, in metres.

2.3 Air and sounding pipes

2.3.4 Alternatively the above hold spaces are to be ~~inserted~~ inerted or filled with dry air if air pipes are not provided.

2.4 Double bottom tanks below cargo tanks and wing tanks

2.4.3 For ships having hold spaces containing cargo tanks, double bottom tanks may be used as fuel oil tanks provided:

- the height of the double bottom tank is not less than ~~0.60~~ 0,60 m.
- air pipes are led to the open deck with a height of not less than ~~0.50~~ 0,50 m above deck.
- air pipes are fitted with a wire gauge as per ~~*Pt 5, Ch 10, 10 Austenitic stainless steels*~~ *Pt 5, Ch 11, 10.6 Gauze diaphragms*.

■ *Section 3*

Cargo handling system

3.1 General

3.1.4 Where gas freeing arrangements are provided, fans are to be installed in the cargo zone. The fans are to be of nonsparking material except for Type N-open. *See also Pt 5, Ch 13, 1.8 Non-sparking fans for hazardous areas*. Where driving motors are electrical and are situated in the cargo zone, they are to be of the certified safe type, *see* ~~*Pt 6, Ch 2, 13.7 Transmitting aerials*~~ *Pt 6, Ch 2, 13.8 Certified safe type equipment*. Otherwise the fan prime mover is to be installed outside the hazardous area in an enclosed space. Where the driving shaft penetrates the bulkhead it is to do so via an approved gastight seal, *see also Pt 5, Ch 13, 3.2 Cargo pumps and compressors 3.2.5*.

3.3 Cargo piping systems

3.3.12 The requirements of *Pt 5, Ch 13, 3.3 Cargo piping systems 3.3.13* to *Pt 5, Ch 13, 3.3, Cargo piping systems 3.3.18* apply to product and process piping including vapour piping and vent lines of safety valves or similar piping intended for Type G tankers.

Table 13.3.1 Nominal thickness steel pipes

Standard pipe sizes outside diameter, in mm		~~Not exceeding~~ Minimum over-riding normal thickness in mm
Exceeding	~~Minimum over-riding normal thickness in mm~~ Not exceeding	

3.4 Terminal fittings at cargo loading stations

3.4.4 The cargo loading and discharge lines in way of the cargo loading station for Type C and N tankers are to be provided with a connection as per *Figure 13.3.1 Connection for the delivery of residual cargoes* ~~for the delivery of residual cargoes~~.

3.7 Remote control valves

3.7.1 Valves which are provided with remote control are, in general, to be arranged for local manual operation independent of the remote operating mechanism, *see also* ~~*Pt 5, Ch 11, 2.4 Attachment of valves to watertight plating*~~ *Pt 5, Ch 11, 2.3 Valves - Installation and control 2.3.2*.

3.9 Ship’s cargo hoses

3.9.9 For Type G tankers, *Pt 5, Ch 13, 3.9 Ship's cargo hoses 3.9.10* to *Pt 5, Ch 13, 3.9 Ship’s cargo hoses 3.9.13* will also be applicable.

■ *Section 4*
Cargo tanks for Type G tankers

4.1 General

4.1.3 The pressure vessels are to comply with *Pt 5, Ch 13, 4.2 Cargo tank design* to *Pt 5, Ch 13, 4.10 Stress relieving independent tanks* and, as far as applicable with the requirements of *Ch 4 Cargo Containment* for independent Type C tanks of the Rules for Ships for Liquefied Gases.

4.2 Cargo tank design

4.2.1 Scantlings based on internal pressure should be calculated as follows:

(c) The welded joint efficiency factor to be used in the calculation according to *Pt 5, Ch 13, 4.2 Cargo tank design 4.2.1(a)* is depending on inspection and non-destructive testing requirements. See for guidance the Rules for Liquefied Gases ~~*4.11 Stress relieving for type C independent tanks*~~ *4.23.2 Shell*.

4.5 Allowable stresses

4.5.1 For independent tanks the maximum allowable membrane stress to be used in the calculation according to *Pt 5, Ch 13, 4.2 Cargo tank design 4.2.1(a)* will be specially considered.

4.5.2 For guidance reference is made to the Rules for Ships for Liquefied Gases ~~*4.5.1 Allowable stresses*~~ *4.23.3 Ultimate design condition*.

4.7 Construction and testing

4.7.3 Independent tanks should be subjected to a hydrostatic test or alternatively to a hydro pneumatic test as per Chapter 4, Section *Part E - Tank Types*, 4.23 ~~for~~ *Type C independent tanks, 4.23.6 Testing* of the Rules for Ships for Liquefied Gases.

4.8 Inspection and non-destructive testing

4.8.1 For independent tanks, inspection and nondestructive testing should be as far as applicable in compliance with ~~Chapter 4, Section *Part E - Tank Types*~~ *Ch 6, 6.5.6 Non-destructive testing 6.5.6.5* of the Rules for Ships for Liquefied Gases and the requirements of *Ch 13, 4 Specific requirements for fusion welded pressure vessels* of the Rules for Materials for Class 1 pressure vessels.

4.10 Stress relieving independent tanks

4.10.1 For independent tanks of carbon and carbon-manganese steel, post-weld heat treatment should be performed after welding. The post-weld heat treatment is to conform to the requirements of ~~*Pt 5, Ch 13, 4.10 Stress relieving independent tanks*~~ *Ch 13, 4.10 post-weld heat treatment* and ~~*Ch 13, 4.11 Basic requirements for post-weld heat treatment of fusion welded pressure vessels*~~ *Ch 13, 4.11 Basic requirements for post-welded heat treatment of fusion welded pressure vessels* in the Rules for Materials. For all carbon and carbon-manganese steel tanks requiring heat treatment, the requirements of *Table 13.4.2 Post-weld heat treatment requirements* in the Rules for Materials are to be complied with.

■ *Section 5*
Cargo tank venting arrangements

5.2 Pressure/vacuum and venting systems for various tanker types

5.2.3 **Type C and N-closed.** Each cargo tank or group of cargo tanks connected to a common vapour pipe is to be provided with:

(j) If explosion protection is not required as per the ADN, Table C, Column 17 the following relaxations can be given:

  o Detonation devices as ~~per*Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.3.(c)*~~ *per Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.3.(d)* are not required to be fitted.

5.2.4 **Type G.** The requirements of *Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.5* to *Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.19 apply.*

5.2.19 The design and testing of the devices mentioned in *Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.2* to *Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.17* are to comply with the requirements of the relevant National Authorities.

5.5 Loading and unloading rates for Type C and Type N-closed tankers

5.5.1 Cargo tank venting systems should be designed and operated so as to ensure that neither pressure nor vacuum created in the cargo tanks during loading or unloading exceeds tank design parameters, *see Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.3(a)* for maximum allowable cargo tank pressures. The main factors to be considered in the sizing of a tank venting system are as follows:

■ *Section 7*

Cargo heating arrangements

7.1 General

7.1.5 Where heating systems are provided for the cargo tanks, the arrangements are to comply with the requirements of *Pt 5, Ch 13, 7.2 Blanking arrangements* to *Pt 5, Ch 13, 7.5 Temperature indication*.

■ *Section 9*

Inert gas systems

9.2 Type C tankers and Type N-closed tankers

9.2.1 One or more pressure-vacuum breaking devices are to be provided to prevent the cargo tanks from being subject to:
Such devices shall be installed on the inert gas main unless they are installed in the venting system required by ~~*Pt 5, Ch 13, 4 Cargo tanks for Type G tankers*~~ *Pt 5, Ch 13, 5 Cargo tank venting arrangements* or on individual cargo tanks.

9.2.2 The set pressure of the vacuum valve required by *Pt 5, Ch 13, 5.2 Pressure/vacuum and venting systems for various tanker types 5.2.3(e)* is to be 3.5 kPa.

Part 5, Chapter 15

Title of Chapter Steering ~~Gear~~ Systems

■ *Section 1*

General

1.1 Application

1.1.1 The requirements of this Chapter apply to the design and construction of steering ~~gear~~ systems.

■ *Section 2*

Performance

2.1 General

2.1.1 Unless the main steering arrangements for ship directional control comprise two or more identical power units, in accordance with *Pt 5, Ch 15, 2.1 General 2.1.4*, every ship is to be provided with main steering arrangements and auxiliary steering arrangements in accordance with the requirements of the Rules. The main ~~steering arrangements~~ and ~~the~~ auxiliary steering arrangements are to be so arranged that the failure of one of them will not render the other one inoperative.

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